

## WEST Search History

DATE: Monday, March 13, 2006

<b>Hide?</b>	<b><u>Set</u> <u>Name</u></b>	<b><u>Query</u></b>	<b><u>Hit</u> <u>Count</u></b>
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L5	(method\$5 or process or produc\$5) same L4	23
<input type="checkbox"/>	L4	(human or (homo with sapien\$5))same L3	39
<input type="checkbox"/>	L3	(clon\$5 or express\$5 or recombinant)same L2	151
<input type="checkbox"/>	L2	(gene or sequence or polynucleotide) same L1	310
<input type="checkbox"/>	L1	(3-beta-galactosyltransferase? or galactosyltransferase? or (galactose with transferase?))	562

END OF SEARCH HISTORY

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## NiceZyme View of ENZYME: EC 2.4.1.122

### Official Name

**Glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase.**

### Reaction catalysed

UDP-galactose + glycoprotein N-acetyl-D-galactosamine  $\rightleftharpoons$  UDP + glycoprotein D-galactosyl-1,3-N-acetyl-D-galactosamine

### Comment(s)

The non-reducing O-serine-linked N-acetylgalactosamine residues in mucin glycoproteins can act as acceptors.

### Cross-references

BRENDA	2.4.1.122
PUMA2	2.4.1.122
PRIAM enzyme-specific profiles	2.4.1.122
Kyoto University LIGAND chemical database	2.4.1.122
IUBMB Enzyme Nomenclature	2.4.1.122
IntEnz	2.4.1.122
MEDLINE	Find literature relating to 2.4.1.122
MetaCyc	2.4.1.122

### View entry in original ENZYME format

All ENZYME / UniProtKB/Swiss-Prot entries corresponding to 2.4.1.-

All ENZYME / UniProtKB/Swiss-Prot entries corresponding to 2.4.-.-

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## ENZYME: 2.4.1.122

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**Entry** EC 2.4.1.122                      Enzyme

**Name** glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase;  
uridine diphosphogalactose-mucin beta-(1->3)-galactosyltransferase

**Class** Transferases  
Glycosyltransferases  
Hexosyltransferases

**Sysname** UDP-galactose:glycoprotein-N-acetyl-D-galactosamine  
3-beta-D-galactosyltransferase

**Reaction** UDP-galactose + glycoprotein N-acetyl-D-galactosamine = UDP +  
glycoprotein D-galactosyl-1,3-N-acetyl-D-galactosamine  
[RN:R05908]

**Substrate** UDPgalactose [CPD:C00052]  
glycoprotein N-acetyl-D-galactosamine

**Product** UDP [CPD:C00015]  
glycoprotein D-galactosyl-1,3-N-acetyl-D-galactosamine [CPD:C04750]

**Comment** The non-reducing O-serine-linked N-acetylgalactosamine residues in  
mucin glycoproteins can act as acceptors.

**Pathway** PATH: map00512 O-Glycan biosynthesis  
PATH: map01030 Glycan structures - biosynthesis 1

**Ortholog** KO: K00731 glycoprotein-N-acetylgalactosamine  
3-beta-galactosyltransferase

**Genes** HSA: 56913 (C1GALT1)  
MMU: 94192 (C1galt1)  
RNO: 65044 (C1galt1)

**Reference** 1 [PMID:6789880]  
Hesford FJ, Berger EG, Van den Eijnden DH.  
Identification of the product formed by human erythrocyte  
galactosyltransferase.  
Biochim. Biophys. Acta. 659 (1981) 302-11.  
2 [PMID:6801057]  
Mendicino J, Sivakami S, Davila M, Chandrasekaran EV.  
Purification and properties of UDP-gal:N-acetylgalactosaminide  
mucin: beta 1,3-galactosyltransferase from swine trachea mucosa.  
J. Biol. Chem. 257 (1982) 3987-94.  
3 [PMID:6366476]  
Schachter H, Narasimhan S, Gleeson P, Vella G.  
Glycosyltransferases involved in elongation of N-glycosidically  
linked oligosaccharides of the complex or N-acetylactosamine type.  
Methods. Enzymol. 98 (1983) 98-134.

**Other DBs** IUBMB Enzyme Nomenclature: 2.4.1.122  
ExPASy - ENZYME nomenclature database: 2.4.1.122  
ERGO genome analysis and discovery system: 2.4.1.122  
BRENDA, the Enzyme Database: 2.4.1.122  
CAS: 97089-61-7

**LinkDB** [All DBs](#)

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